[ABSTRACT]

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The present invention relates to a process for preparing an established avian embryonic germ cell line, comprising subculturing primordial germ cells isolated from avian embryo in a medium containing a suitable cell growth factor, differentiation inhibitory factor and feeder cells. The gonadal primordial germ cells (gPGCs) isolated from the embryo of White Leghorn were incubated for 7-10 days to form colonies in a medium supplemented with SCF (stem cell factor), bFGF (basic fibroblast growth factor), IL-11 (interleukin-11), IGF-I (insulin-like growth factor-I) and LIF (leukemia inhibitory factor). The colonies of PGCs were then subcultured in the same medium as above with mitotically active chicken embryonic fibroblasts (CEFs) to produce colonies of embryonic germ cell line. The EG cell line obtained was maintained for up to 10 passages and proliferated over a period of 16 weeks in repeated subculture. The embryonic germ cell lines prepared by this invention are useful in researches on germ cell differentiation and genomic imprinting, so that they enable to produce transgenic birds through transfection of foreign gene or gene targeting, finally permitting to provide a bioreactor or novel breed with improved characteristics.

[REPRESENTATIVE FIGURE]

Fig. 1